We claim:

1. A method of applying a protective coating to a bottom surface of a wafer, which comprises the steps of:

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forming trenches in a top surface of the wafer;

applying a top side dicing tape to the top surface;

grinding the wafer at a bottom surface opposite the top surface and thereby laying open the trenches;

applying a protective material on the bottom surface and filling the trenches; and

hardening the protective material to form a protection layer.

2. A method of dicing a semiconductor wafer, which comprises:

applying a protective coating to a bottom surface of the wafer in accordance with *claim 1*; and further

fixing the protection layer to a mounting tape for fastening the wafer onto a dicing frame;

removing the top side dicing tape;

dicing the wafer into dies; and

picking the dies off the mounting tape.

3. A method of applying a protective coating to a bottom surface of a wafer, which comprises the steps of:

forming trenches in a top surface of the wafer;

applying a top side dicing tape to the top surface;

grinding the wafer at a bottom surface opposite the top surface and thereby laying open the trenches;

applying a glue layer onto a mounting tape; and

mounting the wafer on the mounting tape and causing the glue to fill the trenches.

4. A method of dicing a semiconductor wafer, which comprises:

applying a protective coating to a bottom surface of the wafer in accordance with *claim 3*; and further

removing the top side dicing tape;

dicing the wafer into dies; and

picking the dies off the mounting tape.

5. A method of applying a protective coating to a bottom surface of a wafer, which comprises the following steps:

applying a protective foil onto a mounting tape; and

mounting a bottom surface of the wafer onto the mounting tape with the protective foil facing the wafer.

6. A method of dicing a semiconductor wafer, which comprises the steps of:

applying a protective coating to a bottom surface of the wafer in accordance with *claim 5*; and further

dicing the wafer including the protective foil into dies; and

picking the dies with the protective foil off the mounting tape.

7. The method according to claim 6, wherein the mounting tape is a UV-foil; and the step of picking off the dies includes applying UV-radiation to separate the UV-foil from the protective foil.